

Fact Sheet



For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-05300007-2010**
Application Received: **November 16, 2009**
Plant Identification Number: **05300007**
Permittee: **ICL-IP America Inc.**
Facility Name: **Gallopolis Ferry Plant**
Mailing Address: **State Route 2, P.O. Box 1721**
Gallipolis Ferry, WV 25515

Physical Location: Gallopolis Ferry, Mason County, West Virginia
UTM Coordinates: 396.5 km Easting • 4,290.30 km Northing • Zone 17
Directions: From Point Pleasant, drive 6 miles south on Rt. 2. The facility is on the right.

Facility Description

Facility manufactures Aryl and Alkyl Phosphate Esters and other Specialty Chemicals. SIC Code: 2869; 2819; 2899

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2008 Actual Emissions
Carbon Monoxide (CO)	86.45	21.03
Nitrogen Oxides (NO _x)	168.62	19.10
Particulate Matter (PM ₁₀)	8.92	0.51
Total Particulate Matter (TSP)	8.92	0.51

Sulfur Dioxide (SO ₂)	1.60	0.19
Volatile Organic Compounds (VOC)	67.43	17.36
<i>PM₁₀ is a component of TSP.</i>		
Hazardous Air Pollutants	Potential Emissions	2008 Actual Emissions
Acetaldehyde	0.41	0.022
Acrolein	0.00*	0.033
Benzene	0.00*	7.0E-04
Benzene, dimethyl	0.00*	3.0E-05
Biphenyl	0.00	2.0E-04**
Bis(2-Chloroethyl) Ether	0.00*	0.004
Chlorine	0.00	0.074 ***
Cresylic Acid (Cresol(-m) and Cresol(-p))	0.35	0.006
Diethanolamine	< 0.001	0.002** and ****
1,4 – Dioxane	0.00*	0.009
Epichlorohydrin	3.17	0.495
Ethylene Dichloride	2.65	1.352
Ethylene Oxide	1.81	0.12
Formaldehyde	0.13	0.026
Hydrochloric Acid	0.22	1.982** and ****
<u>Naphthalene</u>	0.00*	2.0E-04
Phenol	4.62	0.102
Phosphorus	0.00	0.004***
Propylene Dichloride	5.95	3.06
Propylene Oxide	1.77	1.516
Toluene	0.00*	0.009
Triethylamine	0.00	0.015***

Some of the above HAPs may be counted as PM or VOCs.

* HAP are no longer used in raw material or product

** Actual emissions reported higher than PTE are caused by leaks/spills and some over-reporting

***Due to an accidental release in 2008, there were actual releases of these HAPs. However, under normal conditions, these HAPs are under a closed loop and therefore do not have the ability under normal conditions to be released.

**** Due to an accidental release in 2008, actual emissions are higher than PTE

Title V Program Applicability Basis

This facility has the potential to emit 86.45 TPY of CO, 168.62 TPY of NO_x, 8.92 TPY of PM₁₀, 1.60 TPY of SO₂, 67.43 TPY of VOCs, 21.09 TPY of HAPs. Due to this facility's potential to emit over 100 tons per year of NO_x, ICL-IP America Inc. is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	Indirect Heat Exchangers
	45CSR6	Open burning prohibited.
	45CSR7	Particulate Matter Emissions
	45CSR10	Emission of Sulfur Oxides
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Preconstruction permits for sources
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	40 C.F.R. Part 60 Db	Steam Generating Units
	40 C.F.R. Part 61	Asbestos inspection and removal
State Only:	40 CFR 63 Subpart H	Equipment Leaks
	45CSR4	No objectionable odors.
	45CSR27	Toxic Air Pollutants

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR15, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (if any)
R13-2438E	August 24, 2009	
CO-R13, 30-E-2008-8	May 6, 2008	This Consent Order will terminate upon issuance of both the R13-2438E and this Title V Permit (Pursuant to Section "Other Provisions", (8))

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

Determinations and Justifications

This Permit, at the same time, is a Significant Modification SM01 to the initial Title V Permit and a Permit Renewal. The following changes and clarifications to applicability determinations were made in this Permit:

1) 45CSR2: To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers - for Boilers B-5A and B-6

Boilers B-6 and B-5A have been determined to meet the definition of a "fuel burning unit" under 45CSR2 and are, therefore, subject to the applicable requirements therein. Each substantive 45CSR2 requirement is discussed below.

45CSR§2-3.1. Opacity Standard

Pursuant to 45CSR2, Section 3.1, each boiler operated at the Gallipolis Plant is subject to an opacity limit of 10%. Both of the fuel burning units are limited by the permit to combust only natural gas and, therefore, proper maintenance and operation of the boilers should limit the opacity of each unit well below 10% during normal operations.

45CSR§2-4.1.b. Weight Emission Standard

The allowable particulate matter (PM) emission rate for Boilers B-5A and B-6, identified as Type "b" fuel burning units, per 45CSR2, Section 4.1.b, is the product of 0.09 and the total aggregate design heat input of the boilers in million Btu per hour. The total design heat input of the plant boilers is 215.60 mmBtu/Hr. Using the above equation, the facility-wide filterable PM emission limit of the boilers will be 19.40 lb/hr.

Based on emission factors taken from AP-42 (Section 1.4), the maximum aggregate potential hourly total (filterable and condensible) PM emissions from the boilers are estimated to be 1.61 lb/hr. This emission rate is 8.30% of the 45CSR2 limit.

45CSR§2-8.3.c. Recordkeeping and Reporting

Boilers B-6 and B-5A are subject to recordkeeping of quantity of natural gas burned. Condition 4.4.5. was included in the Permit to reflect this requirement.

2) 45CSR7: To Prevent and Control Particulate Air Pollution from Manufacturing Process Operations

45CSR7 has two substantive requirements applicable to the plant manufacturing processes - defined as the production of various product chemicals. These are the opacity requirements under Section 3 and the mass emission standards under Section 4. Each of these sections will be discussed below.

45CSR§7-3 Opacity Standards

Section 3.1 sets an opacity limit of 20% on all applicable source operations. At the Gallipolis Ferry facility, this includes all the particulate matter emission points excluding the boilers and diesel generators. Potential emissions associated with these points are very small and should not, under normal conditions, ever approach at 20% opacity.

45CSR§7-4 Weight Emission Standards

Section 4.1 of 45CSR7 requires that each manufacturing process source operation meet a particulate matter limit based on the weight of material processed through the source operation. The particulate matter sources at the Gallipolis Ferry facility are very small (all individual emission points have a potential-to-emit of particulate matter of less than 1.0 lb/hr). However, the emission sources are not eligible for an exemption from Section 4 of 45CSR7 as the sum of particulate matter from all the applicable source operations (all the particulate matter emission points excluding the boilers and diesel generators) are slightly in excess of 1,000 pounds per year (45CSR§7-10.5).

As a conservative compliance demonstration, use of the facility-wide hourly particulate matter emission rate from applicable source operations will be used to back calculate, using Table 45-7A, the corresponding weight rate. The facility-wide hourly particulate matter emission rate from all applicable source operations is 0.37 lbs/hour. Defining all of the emission sources as Type 'd' sources (the sources with the most restrictive emission limits) under 45CSR7, the back-calculated weight rate calculated from Table 45-7A is 3,208 lbs/hr. The process weight rate from just the Continuous Process Subunit (6,250 lbs/hr) exceeds this calculated weight rate. Therefore, it is clear that emission sources will be in compliance with Section 4.1.

Section 4.2 of 45CSR7 requires that each applicable manufacturing process source operation meet an acid gas concentration limit given under Table 45-7B (Requirement 4.1.8).

3) 45CSR10: To Prevent and Control Air Pollution from the Emission of Sulfur Oxides

45CSR10 has requirements limiting SO₂ emissions from "fuel burning units," limiting in-stack SO₂ concentrations of "manufacturing processes," and limiting H₂S concentrations in process gas streams. Boilers B-6 and B-5A are defined as "fuel burning units" and subject to the applicable requirements discussed below.

45CSR§10 - 3 Fuel Burning Units

The allowable SO₂ emission rate for the boilers, identified as Type "b" fuel burning units, per 45CSR10, Section 3.2(c), is the product of 1.6 and the total design heat input of the boilers in million Btu per hour. The maximum aggregate design heat input (short-term) of the boilers will be 215.60 mmBtu/Hr. Using the above equation, the 45CSR10 facility-wide SO₂ emission limit of the boilers will be 344.96 lb/hr. The maximum potential hourly SO₂ emissions from the boilers is estimated to be 0.57 lb/hr. This emission rate is less than 1% of the 45CSR10 limit.

4) 45CSR27: To Prevent and Control the Emission of Toxic Air Pollutants

The Gallipolis Ferry facility has the potential to emit several compounds identified under 45CSR27 as Toxic Air Pollutants (TAPs) and emits these compounds in amounts in excess of the thresholds identified in Table A of the Rule. The compounds emitted by the plant in excess of the 45CSR27 thresholds are ethylene oxide, propylene oxide, and ethylene dichloride. Under Section 3 of 45CSR27, permittee is required to apply a Best Available Technology (BAT) plan to all chemical processing units at the facility that emit one of the targeted pollutants.

Under Consent Order CO-R27-96-29-A(92), a BAT plan for the facility was mandated (under Attachment A of the Order). This permit includes Requirement 4.1.3 to continue to abide by the BAT plan, and Attachment A with the BAT Compliance Plan.

Additionally, pursuant to Section III.3 of Consent Order CO-R27-96-29-A(92), permittee was required to implement an LDAR program meeting the provisions of 40 CFR 63, Subpart H. Compliance with Subpart H was determined to represent BAT - as defined by 45CSR27 - for the facility. Requirement 4.1.9 has been retained in the proposed permit.

5) 40 CFR 60, Subpart Db: Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

40 CFR 60, Subpart Db is applicable to “each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)).” Boiler B-5A has a heat input capacity of 121.90 mmBtu/hr and was constructed in 1998. Therefore, Boiler B-5A is subject to the applicable standards under Subpart Db.

The only emission standard under Subpart Db applicable to Boiler B-5A is a NO_x emission limit of 0.20 lb/mmBtu given in 40 CFR §60.44Db(l)(1) (Requirement 4.1.18.6). Permittee has estimated NO_x emissions from Boiler B-5A at 0.20 lb/mmBtu.

Compliance with the NO_x standard is, under 40 CFR §60.48Db(b)(1), required to be determined by the use of a Continuous Emissions Monitoring System (CEMS) or predicted in a plan submitted according to 40 CFR §60.49Db(c). According to information contained in the application, Boiler B-5A has been installed with a NO_x CEMS.

All other applicable monitoring, testing, record-keeping and reporting requirements of Subpart Db are included under Requirements 4.2.7, 4.2.8, 4.3.2, 4.4.3 and 4.5.2.

6) 40 CFR 63, Subpart H: National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks

Pursuant to Section III.3 of Consent Order CO-R27-96-29-A(92), permittee was required to implement an LDAR program meeting the provisions of 40 CFR 63, Subpart H. Compliance with Subpart H was determined to represent BAT - as defined by 45CSR27 - for the facility. This requirement (4.1.9) has been retained in the proposed permit. Standard applicable requirements of the Subpart H are included under Requirement 4.1.20. Also, monitoring, testing, recordkeeping and reporting requirements were added under conditions 4.1.20, 4.3.3, 4.4.4 and 4.5.3 to include other applicable requirements of the Subpart for agitators, connectors, pumps, relief valves and valves.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility:

- 1) 45CSR2 - To prevent and control PM air pollution from manufacturing processes and associated operations** for Boilers B-5A and B-6:

45CSR§2-5 Control of Fugitive Particulate Matter - Section 5 of 45CSR2 requires a fugitive particulate matter control system for any source of fugitive particulate matter associated with the fuel burning units. Using natural gas as the primary fuel of the Boilers B-5A and B-6 will result in no potential for fugitive emissions from the boilers.

45CSR§2-8.1.a Testing and 45CSR§2-8.2 Monitoring - Boilers are not subject to these requirements per 45CSR§2-8.4.b because they burn only natural gas.

45CSR§2A-5, 6 Testing and MRR Requirements - Pursuant to Section 3.1(a) and (b) of the 45CSR2A Interpretive Rule, a fuel burning unit that “combusts only natural gas” is exempt from the Testing and Visible Emission Monitoring Plan Requirements (Sections 5 and 6) therein.

- 2) 45CSR7: To Prevent and Control Particulate Air Pollution from Manufacturing Process Operations**

This Rule is not applicable for Diesel Engines at the facility because they are not defined as related to manufacturing process and associated operations, and rather serve secondary processes at the facility: engines C-120 and C-209 are back up air compressors for use during an emergency/power failure/etc., engines OM-183, OM-184, OM-231, and OM-296 are emergency generators to be used during power failures or safety back-up during critical maintenance procedures, engine P-434 is a back-up emergency fire water pump to be used during an emergency if an electrical fire pump is not available.

- 3) 45CSR§10-8 Testing, Monitoring, Record-keeping, & Reporting (TMR&R)** for Boilers B-5A and B-6
Section 8 of Rule 10 requires to test for initial compliance with the limits therein, monitor for continued compliance, and keep records of that compliance. But pursuant to 45CSR§10-10.3, as the boilers “combust natural gas, wood or distillate oil, alone or in combination,” they are not subject to the Requirements under 45CSR10-8.

- 4) 45CSR14: Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration**

Gallipolis Ferry Plant is an existing major source (emissions of NO_x in excess of 100 TPY of a source listed in Table 2.43.a) in an area of attainment and, therefore, subject to the review procedures under 45CSR14 if a “major modification” is proposed. As this permitting action is only the consolidation and revision of existing permits and does not involve any increase in emissions, 45CSR14 is not applicable.

- 5) 40 CFR 60, Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units** for Boiler B-6:

40 CFR 60, Subpart Dc is applicable to “each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).” Although Boiler B-6 has a maximum design heat input of 93.7 mmBtu/hr, it was constructed in 1977 and, therefore, is not applicable to Subpart Dc.

6) 40 CFR 63, Subpart PPP: National Emission Standards for Hazardous Air Pollutant Emissions for Polyether Polyols Production

Permittee., in a letter the DAQ received on April 20, 2009, stated that it "...has terminated the production of all polyether polyols and does not anticipate to produce polyether polyols in the future, and as allowed by the Subpart PPP provisions in 40CFR §63.1420(e)(9), ... is not subject to the Polyether Polyols MACT requirements any longer because it does [not] operate a unit defined as a polyether polyol manufacturing process unit (PMPU)."

To enforce the non-applicability of Subpart PPP, Requirement 4.1.10 is placed in the permit that prohibits permittee from operating a PMPU at their Gallipolis Ferry facility.

7) 40 CFR 64 Compliance Assurance Monitoring (CAM)

Out of all plant's units only Reactor R-27 (Emission Point C-T-60) is potentially subject to CAM: has pre-control PTE for HCl above 100 TPY, has add-on control devices (Scrubbers T-60 and T-61) and has the following limits: minimum liquor flow rate and control efficiency limitation for the scrubbers in Requirement 4.1.6, 45CSR7 HCl stack gas concentration limit in Requirement 4.1.8. HCl emission limit in 4.1.12.1 and production rate limits in 4.1.12.2. Since Title V specified methods are already used to monitor this unit's HCl emissions - parametric monitoring per Requirement 4.2.2, emission calculation per Requirement 4.2.3, and recordkeeping of production rates per Requirement 4.2.4, - this unit is exempt from requirements of CAM.

8) **Conditions 4.2.8. and 4.2.9** of the Permit R13-2438E were not included in the permit, but were cited along with the appropriate monitoring, recordkeeping and reporting requirements (if any) of the corresponding rules (45CSR2, 45CSR10, 40CFR60 Subpart Db and 40CFR63 Subpart H).

9) **Condition 4.3.2** of the Permit R13-2438E is not included in this permit because Boilers B-5A and B-6 are exempt from testing requirements of 45CSR2 and 45CSR10 (see items (1) and (3) above).

Request for Variances or Alternatives

None

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: January 6, 2010
Ending Date: February 5, 2010

All written comments should be addressed to the following individual and office:

Natalya Chertkovsky
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Point of Contact

Natalya Chertkovsky
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 Ext:1220 • Fax: 304/926-0478

Response to Comments (Statement of Basis)

- 1) Per EPA's comment, the Emission Units Table 1.1. was slightly rearranged in order to list all control devices (scrubbers) in a separate section. This section is named "Control Devices", and is located at the end of the Table 1.1. Scrub Towers T-23 and T-24, and HCl Scrub Towers T-35 and T-58 were not moved to the Control Devices section, because they are used as part of a process and are not used as control devices.
- 2) Per Company's comment and due to Company's name change, "ICL Supresta Inc." was replaced with "ICL-IP America Inc." or with word "permittee" where appropriate throughout the Permit and the Fact Sheet.